



CITY OF SAN ANTONIO
DEVELOPMENT SERVICES DEPARTMENT
P.O. BOX 839966 | SAN ANTONIO TEXAS 78283-3966



TO: Development Services Customers

SUBJECT: **INFORMATION BULLETIN 176**
Plumbing Installation / Repairs Within Tunneling Below Foundations

DATE: January 11, 2012/ Revised August 1, 2014/ May 20, 2016/July 1, 2016

CREATED BY: Field Services Division

Purpose:

As a customer initiative, the Development Services Department (DSD) created this **revised** Information Bulletin (IB) to update and clarify IB 176 regarding safety provisions during under-slab plumbing installations/repairs that may require tunneling below the foundation to accomplish plumbing drain line repairs, replacements or re-routes.

DSD revised this IB to inform our customers that in addition to notifying the City of San Antonio DSD plumbing inspector for inspection of the plumbing work, they need to secure the services of a qualified design professional to evaluate the structural condition of the foundation. (See attached form letter.)

Exception: A qualified design professional is not required to evaluate the structural condition of the foundation when;

- The tunnel excavation does not exceed five feet beyond the exterior foundation beam and
- The tunnel excavation does not cross an interior foundation beam and
- The vapor retarder is still in place and
- The exterior foundation beam has not been damaged as a result of the excavation, plumbing repair, plumbing replacement, etc.

Scope:

Tunnel Safety:

DSD performs inspections of plumbing installation/repairs beneath residential and commercial existing slabs and buildings. A safe environment for these inspections is imperative. Because of safety concerns, DSD established the following minimum safety measures in 1996 that pertain to inspector access within the tunnel. These safety measures also pertain to plumbing installations in other similar confined spaces.

Minimum OSHA safety measures are outlined in the listed references. The customer may want to hire an OSHA safety inspector to review the tunneling operations.

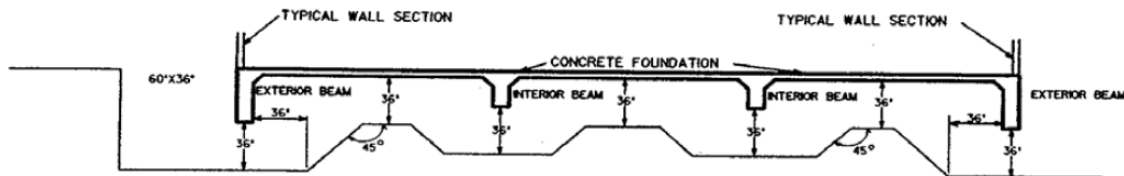
- OSHA Safety Handbook, page 11
- OSHA CFR Title 29, part 1910.146
- OSHA CFR Title 29, part 1926.800

A summary of the requirements are as follows:

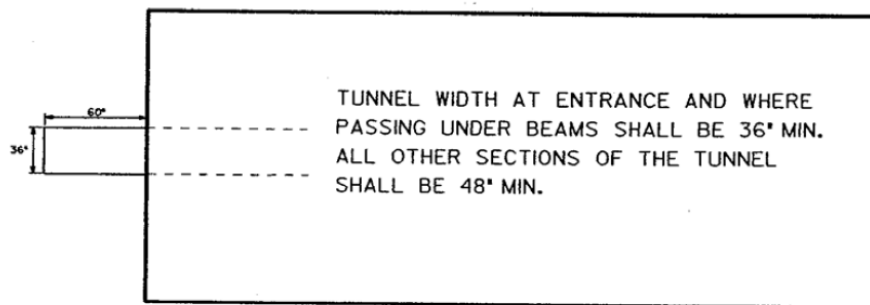
- 1) The tunnel and entry to the tunnel shall be of adequate size to allow the plumbing inspector and qualified design professional to perform thorough and safe inspection(s)/review of the work.
- 2) Plumber or representative must be on site at tunnel entrance during inspection in case of any emergency.
- 3) The tunnel shall be provided with adequate lighting.
- 4) The tunnel shall be adequately ventilated.
- 5) The majority of any water shall be removed from floor of tunnel and dry moisture barriers on tunnel floor (i.e., plastic cover) shall be provided, minimum 6 mil thickness.
- 6) All necessary electrical equipment shall be connected through ground fault circuit protection.

In order to provide adequate access within the tunnel, tunnel excavation shall be at least 4 feet wide and 3 feet high, except the width can be reduced to 3 feet wide where the tunnel crosses under foundation beams. Width of tunnels that are at least 5 feet high may be reduced to at least 3 feet wide with proper shoring provided. Excavation of access tunnels shall provide at least 3 feet of clearance below and to one side of any obstructions within the tunnel. The attached detail drawing clarifies minimum tunnel dimensions necessary for adequate inspector access.

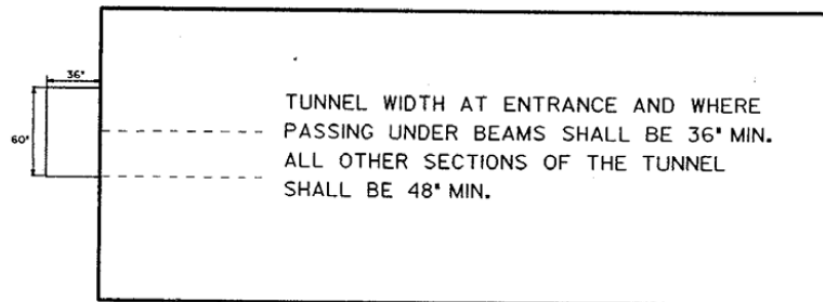
FOUNDATION VIEW SECTION



SIDE VIEW



TOP VIEW



TOP VIEW

Structural Integrity of the Foundation and Construction Review:

Tunnel excavations under a structural foundation may adversely affect the structural integrity of the foundation; therefore DSD requires the customer hire a qualified design professional to evaluate the structural condition of the foundation / floor slab above the area excavated and the condition of the surrounding soils while the tunnel is excavated below the foundation and after the excavation is properly backfilled.

The customer shall hire a qualified design professional to review the other construction work, e.g. replaced vapor retarder directly below the concrete floor slab and the soil type and compaction / placement of the soil within the excavation. The customer shall submit to the City of San Antonio DSD a letter prepared by the design professional indicating that the construction work other than the plumbing was performed satisfactorily. The design professional shall prepare his letter from the standard accepted form letter from the City of San Antonio DSD. The design professional's letter/report shall be submitted to DSD before closing the Plumbing permit. Please email the letter/report to callcenter@sanantonio.gov.

Should you have any questions or concerns regarding this information Bulletin please feel free to contact Senior Plumbing Inspectors John Long at (210) 260-3684 or Joe Jones at (210) 260-5892, or Plumbing Inspections Supervisor, David Rohde at (210) 207-8279. A supplemental guide for this Information Bulletin is also available for purchase from the Structural Engineers Association of Texas (SEAOt) San Antonio Chapter.

Summary: This Information Bulletin is for informational purposes only.

Prepared by: David Rohde, Plumbing Inspections Supervisor

Reviewed by: Michael Constantino, Development Services Manager

Authorized by: Michael Shannon, PE, CBO, Assistant Director

(Engineer's or Engineering Company's Letterhead)

(Date)

(Client Name)

(Client Firm Name)

(Client Address)

(Client Address)

Project: (Project Name)
(Project Address)
San Antonio, Texas 782_____

Property Legal Description: (Legal Description from Bexar Appraisal District, Property Survey, Deed, etc.)

City of San Antonio Building Permit A/P Number: _____

Dear (Client):

As an engineer licensed in the State of Texas, I have personally or with the assistance of qualified individual(s) under my supervision assessed the structural condition of the foundation / floor slab above the area excavated to repair / replace the plumbing. We have prepared construction documents / guidance indicating our design / recommendations to fill the excavated area below the foundation.

The existing foundation for the _____ story building located at the above referenced address consists of a *(description, e.g. concrete floor slab directly supported on the soils below , or stiffened concrete floor slab supported on the soils below)* resisting gravity loads.

In my opinion, based on visits to the site and my experience, knowledge, information and belief, the structural condition of the foundation above the excavated area while the tunnel was excavated below the foundation was structurally adequate to span above the excavation and sustain the prescribed gravity loads of the 2015 Edition of the International Building Code. In addition, the condition of the replaced fill within the excavated area and the foundation above the excavated area should remain structurally adequate.

We performed field observation(s) according to generally accepted contractual guidelines as described in AIA Document C-401-2007.

As denoted by my engineering seal on this letter, I believe that I have fulfilled my obligations as an engineer under the Texas Engineering Practice Act pursuant to its requirements to protect the public health, safety and welfare in the practice of engineering. I further believe that I have met those requirements insofar as my responsibility for my observation for code compliance of the stated work is concerned.

If you have any questions, please call.

Respectfully,
(Structural Engineer Company Name)

(Structural Engineer Signature)

(Structural Engineer Typed Name)

Texas Professional Engineer License Number 000000

